OFFICE OF THE
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Costing a National Guaranteed Basic Income Using the Ontario Basic Income Model

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The Parliamentary Budget Officer (PBO) supports Parliament by providing analysis, including analysis of macro-economic and fiscal policy, for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability

The Honourable Pierre Poilievre (Carleton – CPC) requested that the PBO prepare a cost estimate of establishing a guaranteed income program. This note costs a guaranteed basic income, using parameters set out in Ontario's basic income pilot project.

This analysis is based on Statistics Canada's Social Policy Simulation Database and Model. The assumptions and calculations underlying the simulation results were prepared by PBO; the responsibility for the use and interpretation of these data is entirely that of the author.

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Executive Summary

The Honorable Pierre Poilievre (Carleton–CPC) requested that the Parliamentary Budget Officer (PBO) prepare a cost estimate of establishing a guaranteed income program at the national level.

As a first step in addressing this question, PBO provided a baseline of the actual federal support for low-income Canadians and vulnerable groups in a previous report released on 21 November 2017.[1] In this report, PBO takes the policy parameters of Ontario's basic income pilot project and applies them across the country to estimate the cost of a guaranteed basic income (GBI).

The Ontario Government announced in its 2016 budget that it would test a basic income program. In April 2017, it launched a three-year pilot project in Hamilton, Brantford, Brant County, Lindsay and Thunder Bay and the surrounding area.[2] Recipients started to receive monthly deposits in November 2017.

According to the Ontario Basic Income Pilot, participants must be aged 18 to 64, living on low income. Payments are based on 75 per cent of Statistics Canada's low-income measure (LIM). Single individuals will receive $16,989 less 50 per cent of any earned income; couples will receive $24,027 less 50 per cent of any combined earned income.

People with a disability will receive an additional $500 per month (or $6,000 per year). The payments replace Ontario Works and the Ontario Disability Support Program.[3] The Canada Child Benefits (CCB) and the Ontario Child Benefit (OCB) will be maintained as guaranteed security incomes for children.

Overall, as shown in Summary Table 1, the annual gross cost of expanding the Ontario Basic Income Pilot across the country would amount to an estimated $76.0 billion in 2018-2019. By 2022-2023, it would reach nearly $79.5 billion.

Summary Table 1 Gross cost of a Guaranteed Basic Income[4]

$ millions	2018-19	2019-20	2020-21	2021-22	2022-23
Basic cost	72,822	73,496	74,172	75,039	75,992
Supplement cost for disability	3,194	3,265	3,336	3,405	3,471
Total GBI cost	76,017	76,761	77,508	78,444	79,463

Source: PBO calculations, using SPSD/M model. All costs in millions of dollars.

Notes: To calculate the corresponding income guarantees for next fiscal years, we use the Consumer Price Index (CPI) rate of inflation.

Totals do not add due to rounding.

Based on our previous report on the federal support for low-income individuals and groups, PBO identified $32.9 billion as federal support for the category of people defined by our benchmark model.

If this amount were deducted from the total estimated GBI cost of $76.0 billion in 2018-2019, the net cost of a federally implemented GBI would be $43.1 billion.

However, the GBI could take the form of a combined federal-provincial basic income system managed by an intergovernmental fiscal arrangement. This would replace some provincial transfers for low-income individuals and families, including many non-refundable and refundable tax credits, thereby reducing its net cost.

Furthermore, GBI costs may appear large at the aggregate level. However, the following table shows that more than 7.5 million people would benefit from the basic cost of GBI. Thus, on a per capita basis, the annual cost would range between $9,421 and $10,169 for the period 2018-2023.

Summary Table 2 Cost of a Guaranteed Basic Income per capita

	2018-19	2019-20	2020-21	2021-22	2022-23
Basic cost of GBI ($ millions)	72,822	73,496	74,172	75,039	75,992
Number of potential recipients (000)	7,730	7,657	7,587	7,528	7,473
Basic cost per capita ($)	9,421	9,598	9,776	9,968	10,169

Source: PBO calculations, using SPSD/M model.

These estimates represent pre-behavioral (static) costs. We do not take behavioral reactions to the GBI into consideration. For example, some studies show that a guaranteed minimum income could have a negative impact on labour force participation and hours worked.[5]

Thus, individuals who decide to cut working hours in response to the GBI would find that their earned income declines, while their GBI rises. Also, the decline in hours worked would result in less income tax revenue for the federal and provincial governments.

1. Introduction

Because of the adverse effects of poverty, some people have advocated that governments should provide sufficient uniform financial transfers to maintain a basic standard of living for individuals living in low income.[6]

This transfer could be called a guaranteed basic income (GBI), or a guaranteed annual income (GAI), or a guaranteed minimum income (GMI).

The GBI can reduce the poverty rate or the depth of poverty while providing an incentive to obtain other income. Also, it requires minimal conditions, with no obligation to work and it is simple to administer.

This transfer can take two forms:

1. A **universal basic income** which is a flat non-taxable amount assigned to everyone annually, regardless of their circumstances. Earned income above this amount is taxable. This form of income is currently being tested in Finland. A variation could operate in a similar fashion to the Old Age Security (OAS), in which the allowance is increasingly clawed back when income passes a certain level.

   A common criticism of a universal basic income is that its potential cost could be prohibitive, and it could undermine work incentives (Hum and Simpson 2001).

2. A **negative income tax** (NIT). Families with no income would receive the maximum amount, which is reduced as income from other sources increases (similar to the Guaranteed Income Supplement for seniors). The negative income tax involves setting a level of support, say the poverty line or a percentage of the poverty line. It would then top up anyone, or any household (on a monthly basis), who has income below that level as reported in their tax filing to reach the predetermined level. Income beyond that would be taxable, and eventually some or the entire top-up would disappear.

"Under the NIT system, there is always an incentive for beneficiaries to earn more income or acquire it from sources other than the NIT benefit. However, unless the guarantee is set at the poverty threshold, the NIT cannot eliminate poverty on its own. Typically, the NIT guarantee will be lower than the poverty threshold by design, in order to maintain an incentive to obtain other income. The NIT can, however, reduce the poverty rate and the depth of poverty if the basic guarantee is above the minimum level of current last-resort social assistance programs".[7]

The idea of a single financial transfer from the government to individuals or families in the form of a basic income is not new to Canadian policy discussions. A guaranteed income was proposed by a special Senate Committee on Poverty in 1971.[8] It recommended the NIT as a potential policy to fight against poverty.

Building on this proposal, the federal government in collaboration with the Province of Manitoba piloted the Manitoba basic annual income experiment (MINCOME) in Winnipeg and Dauphin between 1974 and 1979. In 1985, the Royal Commission on the Economic Union and Development Prospects for Canada (also known as the Macdonald Commission) stated that a universal income security program is "the essential building block" for social security programs in the 21st century.[9,10]

A recent example of NIT is Ontario's Basic Income Pilot Project. The Ontario government announced in its 2016 budget that it would test a basic income program for individuals aged 18 to 64. The Ontario pilot test would replace provincial social assistance payments, delivered through Ontario Works and the Ontario Disability Support Program, with a negative income tax.[11]

This report takes the policy parameters of Ontario's basic income pilot project and applies them across the country to estimate the cost of a GBI.

2. Ontario's Basic Income Pilot Project

In June 2016, the Province of Ontario asked the Honorable Hugh Segal, a former senator, to provide advice on how to design a basic income pilot project.

In his subsequent discussion paper, Segal recommended that the province test a negative income tax model that provides recipients with 75 per cent of the low-income measure, regardless of their employment status.[12]

The payments would replace Ontario Works and the Ontario Disability Support Program with a more generous basic income, which would be disbursed automatically to those living beneath a certain income threshold.

Segal said the pilot should test various levels of basic income and different tax rates on income earned on top of the basic income. Testing different parameters would help identify the best combinations to reduce poverty, while not discouraging people from improving their incomes through labor force participation.

Segal also noted that the government should not test a "big bang" approach. That would entail replacing all social supports, including those not specifically related to poverty, with a single monthly cheque. He also felt it should not adopt a universal, fixed payment to all adult Ontarians, living in poverty or otherwise, which would be taxed according to a general income tax schedule.

In April 2017, the Ontario Government announced that it would undertake a three-year basic income pilot project, based on Segal's discussion paper.[13] To test the basic income in a variety of settings, it would take place in three communities: Hamilton, Brantford and Brant County; Thunder Bay and the surrounding area; and Lindsay.

The goal of the project is to test how a basic income might improve the health, education and job prospects of people living on low incomes. Recipients began receiving monthly income deposits in November 2017.

Participants had to be aged 18 to 64 and living on low income, and were selected randomly. Payments are based on 75 per cent of the low-income measure. Single individuals receive up to $16,989, while couples receive up to $24,027. People with a disability receive an additional $500 per month (or $6,000 per year).

Participants can go to school or be employed while receiving the basic income. Payments are reduced by $0.50 for every dollar that an individual earns through employment.

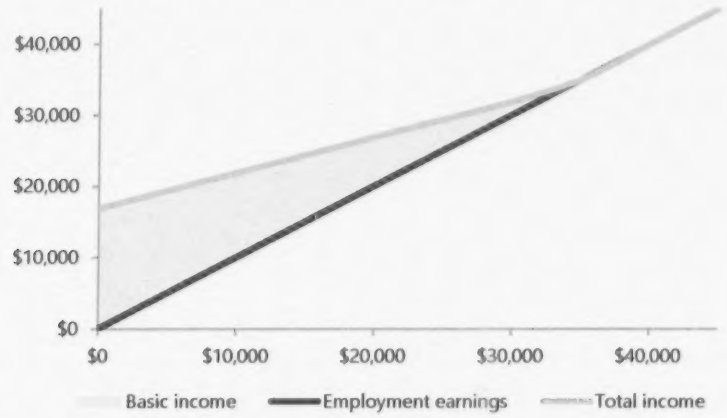
Additionally, participants receiving Employment Insurance or Canada Pension Plan payments have their basic income reduced dollar for dollar. However, participants receiving other benefits, such as the Canada Child Benefit and the Ontario Drug Benefit, continue to receive them.

The pilot is monitored by an advisory group of research and evaluation experts and will be evaluated by a third-party research group.

As shown in Figure 2-1, when employment earnings are zero, the basic income (the shaded area between the red and blue lines) provides a person's total income, which in this case is $16,989.

The basic income is reduced as an individual receives more employment earnings, at a rate of $0.50 for every dollar of earnings, although total income increases. The basic income reaches zero when employment earnings, and total income, are twice the basic income limit, or $33,796.

Figure 2-1 Change in total income due to the GBI



Source: PBO calculations based on the Ontario pilot project parameters.

In this report, we use the Ontario basic income parameters to approximate the necessary federal budget that should be allocated to a national GBI. The latter could replace some tax credits that are geared to low-income individuals, such as the GST credit and the Working Income Tax Benefit. Also, provincial transfers such as social assistance could be replaced by the GBI.

3. Cost of a Guaranteed Basic Income

PBO took the policy parameters of Ontario's basic income pilot project and applied them across the country to estimate the cost of a GBI. The methodology relies on Statistics Canada's SPSD/M, which is a statistically representative database of Canadian individuals in their family context.

The SPSD/M can be used to assess the cost implications or income redistribution effects of changes in the personal taxation and cash transfer system.[14]

Our overall approach follows Simpson and Stevens (2017) and Boadway *et al.* (2016) by using the SPSD/M nuclear family net income at which the tax-back rate is applied. The nuclear family is consistent with the family level benchmark defined by the Ontario basic income pilot in which the participants must be aged 18 to 64 and living as a single or in a couple on low income.[15]

PBO chose the net income as a measure of the earned income defined by the Ontario GBI model because it excludes welfare (social assistance payments) and disability transfers.[16] The Ontario GBI model requires that the participants receiving support through social assistance would need to withdraw from Ontario Works or the Ontario Disability Support Program (ODSP).

In this respect, a part of GBI would replace some federal and provincial transfers, such as the disability transfers and social assistance allowances.

The Ontario model uses a guaranteed income of $16,989 that determines the full benefit payment when no earned income is available in 2017-2018. To calculate the corresponding income guarantees for future fiscal years, we used the Consumer Price Index (CPI) rate of inflation projected by PBO.

Overall, as shown in Table 3-1, the total annual estimated gross cost of the defined GBI would range between $76.0 billion and $79.5 billion for the period 2018-2023. The guaranteed income for disability would range between $3.2 billion and $3.5 billion.

Table 3-1 Gross cost of a Guaranteed Basic Income

$ millions	2018-19	2019-20	2020-21	2021-22	2022-23
Basic cost	72,822	73,496	74,172	75,039	75,992
Supplement cost for disability	3,194	3,265	3,336	3,405	3,471
Total GBI cost	76,017	76,761	77,508	78,444	79,463

Source: PBO calculations, using SPSD/M model. All costs in millions of dollars.
Note: Totals do not add due to rounding.

GBI costs may look large at the aggregate level. However, Table 3-2 shows that more than 7.5 million people would benefit from the basic cost of GBI. Thus, on a per capita basis, the annual cost would range between $9,421 and $10,169 for the period 2018-2023.

Table 3-2 Cost of a Guaranteed Basic Income per capita

	2018-19	2019-20	2020-21	2021-22	2022-23
Basic cost of GBI ($ millions)	72,822	73,496	74,172	75,039	75,992
Number of potential recipients (000)	7730	7657	7587	7528	7473
Basic cost per capita ($)	9,421	9,598	9,776	9,968	10,169

Source: PBO calculations, using SPSD/M model.

There are several limitations to this cost estimate, however.

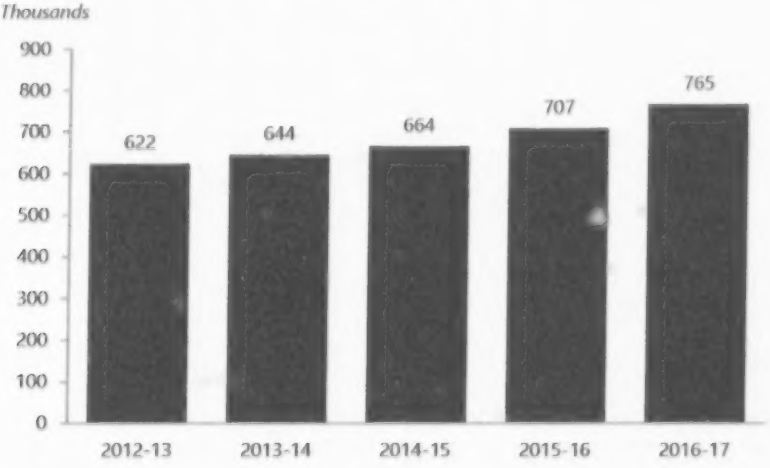
1. First, SPSD/M data do not include the territories, persons residing on reservations, or armed forces personnel residing in barracks. Thus, our simulation excludes these groups, and the costs could be underestimated. However, Statistics Canada estimated that the population in Yukon, Nunavut, and Northwest Territories did not exceed 0.33 per cent of the total Canadian population in 2016. INAC data showed that the on-reserve population was 500,800 in 2016, which represents 1.38 per cent of the total Canadian population. Hence, excluding these groups from the calculation does not substantively bias the results.
2. Second, the SPSD/M model is a static accounting model. Thus, we do not take behavioral reactions to the GBI into consideration. We can suggest that this behavioral reaction could affect the cost of implementing a GBI. For example, Hum and Simpson (1993) reviewed research from the five income-maintenance experiments in Canada and the United States, focusing on the work-incentive issue. For the Canadian experiment, they showed that hours worked declined with the introduction of a guaranteed income program. The reduction in hours worked was very small for men, never exceeding 9 per cent, but it was larger for women.

Regarding the U.S. experiments, they documented that results implied a reduction in hours worked of about 6 per cent for husbands, 19 per cent for wives, and 15 per cent for single mothers. Also, a more recent study of Clavet *et al.* (2013) showed that the guaranteed minimum income could have a significant negative impact on hours of work and labor force participation in Quebec.

When people cut working hours in response to the GBI, their earned income falls, leading to a higher GBI. Furthermore, the decline in hours worked costs the federal and provincial governments a loss in income tax revenues, which could be considered as an indirect cost of implementing a GBI.

3. Third, we used the frequency of federal tax claims for the disability tax credit to identify the number of individuals with a disability. This credit is assigned only to blind persons or persons confined to a wheelchair or a bed, which is a highly restrictive definition of disability status of individuals. In contrast, the Canadian Survey on Disability indicates that 1,146,940 people aged between 15 and 64 were classified as adults with severe and very severe disabilities in 2012. This number is considerably greater than the number of people who claim the disability tax credit. Using this broader definition, the supplemental transfer for disability would grow to $6.9 billion.

Figure 3-1 Total number of approved people claiming Disability Tax Credit



Source: Canada Revenue Agency, *Disability Tax Credit at a glance.*

4. Actual Federal Support for Low-Income People vs. GBI

In a previous report released on 21 November 2017, we categorized existing federal programs and tax expenditures for low-income individuals and families and other vulnerable groups. We estimated the federal support for these Canadians at $56.8 billion in 2017-2018: 55 programs with expenses of $39.3 billion and 20 tax expenditures that provided $17.5 billion.[17]

These tax expenditures and programs cover Indigenous people, children under the age of 18, and seniors aged 65 and over, in addition to other Canadians and recent immigrants. However, these three groups are not included in our estimate of the GBI cost. Consequently, we should subtract these transfer payments from the total actual federal support to properly compare the GBI cost and the actual federal policy cost.

In 2017-2018, we identified $11.8 billion assigned to the GIS and $3.9 billion for OAS as support for low-income seniors. Regarding children, low-income families receive $4.2 billion as CCB. Also, we estimate the federal support for Indigenous people at $4.0 billion.

In total, the tax expenditures and programs for these groups reached $23.9 billion in 2017-2018. Hence, the remaining amount, $32.9 billion, could be considered as the federal support for the category of people defined by our benchmark model.

With the estimated GBI cost of $76.0 billion in 2018-2019, the net cost of a federally implemented GBI would be $43.1 billion.

However, the GBI could be a combined federal-provincial basic income system that could be managed by an intergovernmental fiscal arrangement. This would replace some provincial transfers for low-income individuals and families including many non-refundable and refundable tax credits, thereby reducing its net cost.

Appendix A: Defining Low Income

The Government of Canada does not have an official definition of poverty. Instead, it uses several different measures to determine the number of Canadians living in low income:

- The low-income cut-offs are income thresholds below which a family must devote 20 per cent more of its income than the average family spends on the necessities of food, shelter and clothing. Statistics Canada provides LICOs that vary by seven family sizes and five community populations.[18]
- The low-income measure is 50 per cent of median household incomes. It is often used to make international comparisons. Statistics Canada uses this measure to provide low-income statistics by family types and census areas.[19]
- The market basket measure is based on the cost of buying a specific set of goods and services that represent a basic standard of living, including clothing, transportation, shelter and other expenses. Statistics Canada uses a reference family of two adults aged 25 to 49 and two children (aged 9 and 13) to provide thresholds for various regions.[20]

As each of these measures has a different basis, they provide a different estimation for the percentage and number of Canadian living in low income (Table A-1).

Table A-1 Percentage and Number of Canadians with Low Income, 2014

Measure	Percentage of Canadians with low income	Number of Canadians with low income (millions)
Low-income cut-offs	8.8	3.0
Low-income measure	13.0	4.5
Market basket measure	11.3	3.9

Source: Government of Canada, A Backgrounder on Poverty in Canada, October 2016.

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4. These estimates do not include Yukon, Nunavut or Northwest Territories, or persons residing on reservations. Nevertheless, the Statistics Canada and INAC data show that the population of these groups did not exceed 1.7 per cent of the Canadian population in 2016. Hence, excluding these groups from the calculation does not substantively bias the results.
5. For example, Clavet et al. (2013) shows that the impact of a guaranteed minimum income on hours of work and labor force participation in Quebec may be negative.
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15. SPSD/M nuclear families are defined to exclude any children aged 18 or older. Consistent with emerging practice in taxation that treats 18-year-old individuals as adults, any such children in the household are deemed to constitute their own nuclear families.
16. Ibid. note 3.
17. Ibid. note 2.
18. Statistics Canada, CANSIM Table 206-0092.
19. Statistics Canada, CANSIM Table 206-0042.
20. Statistics Canada, CANSIM Table 206-0093.